Application No.: 10/810,706 Docket No.: KPC-0309

## **AMENDMENTS TO THE SPECIFICATION**

Please amend the specification by rewriting the following paragraphs, as set forth below in marked-up form.

Please amend the paragraph on page 13, lines 10-16 as follows:

--Among the epoxy resins available by the reaction between a polyphenol compound and epichlorohydrin, those derived from bisphenol A and represented by the following formula:

$$H_{2}C \xrightarrow{\text{Pi}C} -H_{2}C - 0 \xrightarrow{\text{C}} -\frac{C}{C}H_{3} \xrightarrow{\text{C}} 0 - CH_{2} - CH - CH_{2} - 0 \xrightarrow{\text{C}} -\frac{C}{C}H_{3} \xrightarrow{\text{C}} 0 - CH_{2} - CH_{2$$

wherein n stands for 0 to 8 are preferred.--

Please amend the specification from page 46, line 14 to page 47, line 16 as follows:

-- Preparation Example 9: Curing Agent (No. 2)

"COSMONATE M-200" (270-parts g) and 25-parts g of methyl isobutyl ketone were added to a reaction vessel. The resulting mixture was heated to 70°C. After 15 parts-g of 2,2-dimethylbutane was added in portions and 118 parts-g of ethylene glycol monobutyl ether was added dropwise, the mixture was reacted at 70°C for 1 hour. The reaction mixture was cooled and 152 parts-g of propylene glycol was added thereto.

While keeping the temperature, sampling was conducted time-dependently. The disappearance of the absorption of unreacted isocyanate was confirmed by infrared absorption spectrum, whereby a curing agent No. 2 having a solid content of 90% was

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obtained.

Preparation Example 10: Curing Agent 3

A curing agent No. 3 having a solid content of 90% was obtained by adding dropwise 174 parts-g of methyl ethyl ketoxime to 222 g of isophorone diisocyanate and 44 g of methyl isobutyl ketone at 50°C.

Preparation of Emulsion for Cationic Coating Composition

Preparation Example 11: Emulsion No. 1

After uniformly stirring a mixture of 87.5 parts-g (70 parts-g in terms of a resin content) of Base resin No. 1, 33.3 g (30 g in terms of a resin content) of Curing agent No. 1 and 13 parts-g of 10% acetic acid, deionized water was added dropwise in about 15 minutes while vigorously stirring the reaction mixture, whereby Emulsion No. 1 having a solid content of 34% was obtained.--

Please amend Table 1, Table 2, and Table 3 as follows (starting on page 4 of this amendment)

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	Prep.	Ex. 20	No. 10																								
	Prep.	Ex. 19	No. 9																								
	Prep.	Ex. 18	No. 8																								
	Prep.	Ex. 17	No. 7		α *π	+ (02)	+10/1						-														
-[	Prep.	Ex. 16	No. 6		α 1,	+ (04)	+1																				
osition	Prep.	Ex. 15	No. 5				·				÷										•				× 4.78	± (0/)	
Emulsion Composition	Prep.	Ex. 14	No. 4	•															÷	.0.70	+ (0/)						
Emulsic	Prep.	Ex. 13	No. 3		•										87.5*	(10)									•		,
Table 1:	Prep.	Ex. 12	No. 2	•.••							87.5	<del>+</del> (0/.)				, ,			•								
	Prep.	Ex. 11	No. 1		۸ ۲۵	+ (02)	+1																				
			Emulsion	Base resin No. 1	(solid content: 80%	by wt.)	Xylene formaldehyde	resin	Base resin No. 2	(solid content: 80%	by wt.)	Xylene formaldehyde	resin	Base resin No. 3	(solid content: 80%	by wt.)	Polyol-modified Ep	Base resin No. 4	(solid content: 80%	by wt.)	Nonylphenol-added	polyol modified Ep	Base resin No. 5	(solid content: 80%	by wt.)	Benzoic-acid-added	polyol-modified Ep
Ì				Composi-	tion		(Ep =	Epoxy	Resin)	_								_									

	Base resin No. 6										
	(solid content: 80%								87.5*	87.5*	87.5*
	by wt.)								# (04)	± (0L)	± (0L)
	Amine-added Ep								I	l	ı
	Curing agent No. 1	٠									
	(solid content: 90%	33.3*	33.3*	33.3*	33.3*	33.3*			33.3*		
	by wt.)	(30) #	(30) ‡	(30) #	(30) ‡	(30) #			(30) #		
	(Crude MDI (1))					i			1		
	Curing Agent No. 2										
	(solid content: 90%										
	by wt.)						33.3*			33.3*	
-	(Crude MDI-PG block						(30) #			(30) ±	
	(2))			•							
	Curing agent No. 3										
	(solid content: 90%							33.3*			33.3*
	by wt.)							(30) #			(30) ‡
	(IPDI-Ox (3))							- I			ı
	10% by wt. acetic	÷	<del>)</del>	) C	,		- (				
	acid		13	13,	. L.J. *	κ γ	× 6.1 × 1	* I	13* 	* I 8 I	13*
	Deionized water	160.2*	160.2*	160.2*	160.2*	160.2*	160.2*	160.2*	160.2*	160.2*	160.2*
345	34% by wt Rmilaion	294*	294*	294*	294*	294*	294*	294*	294*	294*	294*
1		(100) #	(100) # (100) #	(100)	(100) # (100) # (100) #	(100) #	(100) #	(100) #	(100) #	(100) #	(100) #
1 4	- north by noiset					A				0.00	

\* = parts by weight
t = parts by weight in terms of resin content

(1) MDI = diphenylmethane-2,4' and/or -4,4'-diisocyanate (2) MDI-PG = diphenylmethane-2,4' and/or -4,4'-diisocyanate blocked by propylene glycol (3) IPDI-Ox = isophorone diisocyanate blocked by an oxime compound

Table 2: Composition of Pigment Dispersed Paste

,	7	)
	Preparation	Preparation
	Example 21	Example 22
Pigment dispersed paste	No. 1	No. 2
Epoxy quaternary ammonium type	5.83*	5.83*
dispersing resin	(3.5) #	(3.5) #
Titanium oxide	14.5*	14.5*
Purified clay	* 4.	, J*
Bismuth hydroxide	, 1*	3*
Dioctyltin oxide	1*	1*
Carbon black	0.4*	0.4*
Deionized water	20.1*	21.8*
Solid content. 55% by wt	49.8*	53.5*
SOTTE CONCENTS 23 MC.	(27.4) ‡	(29.4) ‡

\* = parts by weight
t = parts by weight in terms of resin content

3-1: Compositions	,	oating	s·Prop	ertie	of	Coating	- 1		Result	w [
	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Ex. 7	Comp. Ex. 1	Comp. Ex. 2	Comp. Ex. 3
Cationic coating	No. 1	No. 2	No. 3	NO. 4	NO. 5	No. 6	No. 7	No. 8	No. 9	NO. 10
Emulsion No. 1 (Base resin No. 1, Curing agent No. 1)	297*		٠.		•			·		
Emulsion No. 2 (Base resin No. 2, Curing agent No. 1)		297*								
Emulsion No. 3 (Base resin No. 3, Curing agent No. 2)		-	297*							
Emulsion No. 4 (Base resin No. 4, Curing agent No. 1)			-	297*		•				
Emulsion No. 5 (Base resin No. 5, Curing agent No. 1)	-		,		297*					•
Emulsion No. 6 (Base resin No. 1, Curing agent No. 2)						297*				
Emulsion No. 7 (Base resin No. 1, Curing agent No. 3)							297*			
Emulsion No. 8 (Base resin No. 6 Curing agent No. 1)								297*		
Emulsion No. 9 (Base resin No. 6; Curing agent No. 2)		-							297*	
Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)										297*
Pigment-dispersed paste No. 1	49.8*	49.8*	49.8*	49.8*	49.8*	49.8*	49.8*		49.8*	
Pigment-dispersed paste No. 2								53.5*		53.5*
Deionized water	,290 <del>,</del>	290*	290*	290*	290*	290*	290*	290*	296*	296*
20% Cationic coating	637*	637*	637*	637*	637*	637*	637*	637*	647*	647*
wei.										
	Compositions  onic coating  sion No. 1 (Base 1, Curing agent 1  sion No. 2 (Base 2, Curing agent 1  sion No. 4 (Base 3, Curing agent 1  sion No. 5 (Base 5, Curing agent 1  sion No. 6 (Base 1, Curing agent 1  sion No. 6 (Base 1, Curing agent 1  sion No. 9 (Base 5, Curing agent 1  sion No. 9 (Base 6, Curing agent 1  sion No. 9 (Base 6, Curing agent 1  sion No. 10 (Base 6, Curing agent 1	Cationic coating  Emulsion No. 1 (Base resin No. 1)  Emulsion No. 2 (Base resin No. 2)  Emulsion No. 3 (Base resin No. 2)  Emulsion No. 4 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 5 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 1)  Emulsion No. 7 (Base resin No. 1)  Emulsion No. 8 (Base resin No. 1)  Emulsion No. 9 (Base resin No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Deionized water 837*  20% Cationic coating 8637*	Cationic coating  Emulsion No. 1 (Base resin No. 1)  Emulsion No. 2 (Base resin No. 2)  Emulsion No. 3 (Base resin No. 2)  Emulsion No. 4 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 5 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 1)  Emulsion No. 7 (Base resin No. 1)  Emulsion No. 8 (Base resin No. 1)  Emulsion No. 9 (Base resin No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Deionized water 837*  20% Cationic coating 8637*	Cationic coating  Emulsion No. 1 (Base resin No. 1)  Emulsion No. 2 (Base resin No. 2)  Emulsion No. 3 (Base resin No. 2)  Emulsion No. 4 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 5 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 1)  Emulsion No. 7 (Base resin No. 1)  Emulsion No. 8 (Base resin No. 1)  Emulsion No. 9 (Base resin No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Deionized water 837*  20% Cationic coating 8637*	Cationic coating  Emulsion No. 1 (Base resin No. 1)  Emulsion No. 2 (Base resin No. 2)  Emulsion No. 3 (Base resin No. 2)  Emulsion No. 4 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 5 (Base resin No. 4, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 5, Curing agent No. 1)  Emulsion No. 6 (Base resin No. 1)  Emulsion No. 7 (Base resin No. 1)  Emulsion No. 8 (Base resin No. 1)  Emulsion No. 9 (Base resin No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 1)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Emulsion No. 10 (Base resin No. 6, Curing agent No. 3)  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Pigment-dispersed paste No. 2  Deionized water 837*  20% Cationic coating 8637*	Cationic coating of Cationic Coatings.Properties of Ex. 1: Compositions of Cationic Coatings.Properties of Ex. 1: Ex. 2: Ex. 3: Ex. 4: Ex. 1: Ex. 1: Ex. 2: Ex. 3: Ex. 4: Ex. 1: Ex. 1: Cationic coating	Cationic coating of Cationic Coatings.Properties of Ex. 1: Compositions of Cationic Coatings.Properties of Ex. 1: Ex. 2: Ex. 3: Ex. 4: Ex. 1: Ex. 1: Ex. 2: Ex. 3: Ex. 4: Ex. 1: Ex. 1: Cationic coating	Cationic Coatings Properties of Coating States   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 1   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 1   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 1   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 1   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 1   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex. 6   Ex. 1   Ex. 1   Ex. 2   Ex. 3   Ex. 4   Ex. 5   Ex. 6   Ex.	Cationic coating of Cationic Coatings.Properties of Cating Film.Test	Cationic Coating of Coating Film Test Results

ults	48*	60.3*	5.1* 5.0* 4.8* 4.8* 4.7* 3.5* 3.1* 2.7* 2.8* 2.3*	ວ	ט	B	В
t Res	56*	58.5.*	2.8*	ф.	. Я	Ą	A
lm·Tes	. 65 <u>*</u> 55 <u>*</u>	56.2*	2.7*	В	В	A A A	В
ing Fi	. 65*	11.5*	3.1*	В	A	A	A
Coat	72*	8.1*	3.5*	В	Ą	А	Ą
ies of	85*	5.3*	4.7*	А	A	A	A A A A
opert	80* 82* 78* 82*	5.8*	4.8*	A	A	A A	A
ıgs•Pr	78*	6.2*	*8.4	А	Ą	Ą	A .
Coatir	82*	5.6*	5.0*	A	Ą	A	Ą
onic	*08	4.1*	5.1*	А	Æ	Ą	Æ
Table 3-2: Compositions of Cationic Coatings.Properties of Coating Film.Test Results	Properties Glass transition point (°C) of coating *2	Oxygen permeability *3 (x10 <sup>-12</sup> ) 4.1* 5.6* 6.2* 5.8* 5.3* 8.1* 11.5* 56.2* 58.5* 60.3*	Adhesion (kg/cm²) *4	Corrosion resistance *5	Resistance against hot salt- water immersion *6	Exposure corrosion resistance **7	Finish property (horizontal surface) *8
Table	Properties of coating	film				results	